1. Record Nr. UNINA9910300376303321

Titolo	Lasers in Materials Science / / edited by Marta Castillejo, Paolo M. Ossi, Leonid Zhigilei
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2014
ISBN	3-319-02898-7
Edizione	[1st ed. 2014.]
Descrizione fisica	1 online resource (396 p.)
Collana	Springer Series in Materials Science, , 0933-033X ; ; 191
Disciplina	621.366
Soggetti	Lasers Photonics Optical materials Electronics - Materials Surfaces (Physics) Interfaces (Physical sciences) Thin films Nanotechnology Materials—Surfaces Optics, Lasers, Photonics, Optical Devices Optical and Electronic Materials Surface and Interface Science, Thin Films Nanotechnology and Microengineering Surfaces and Interfaces, Thin Films
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	From the Contents: Laser Physics for Materials Scientists: A Primer -- Material Response to Laser Energy Deposition (Thermal and Hyper thermal Processes) -- Non-Thermal Material Response to Laser Energy Deposition -- Atomic Movies of Laser-Induced Structural and Phase Transformations from Molecular Dynamics Simulations.
Sommario/riassunto	This book covers various aspects of lasers in materials science, including a comprehensive overview on basic principles of laser-materials interactions and applications enabled by pulsed laser

systems. The material is organized in a coherent way, providing the reader with a harmonic architecture. While systematically covering the major current and emerging areas of lasers processing applications, the Volume provides examples of targeted modification of material properties achieved through careful control of the processing conditions and laser irradiation parameters. Special emphasis is placed on specific strategies aimed at nanoscale control of material structure and properties to match the stringent requirements of modern applications. Laser fabrication of novel nanomaterials, which expands to the domains of photonics, photovoltaics, sensing, and biomedical applications, is also discussed in the Volume. This book assembles chapters based on lectures delivered at the Venice International School on Lasers in Materials Science which was held in Isola di San Servolo, Venice, Italy, in July, 2012.